

In the Claims:

1-47. Cancelled.

48. (Currently Amended) An expandable medical device comprising:
a plurality of elongated beams, the plurality of elongated beams joined together to form a substantially cylindrical device which is expandable from a cylinder having a first diameter to a cylinder having a second diameter, the plurality of elongated beams having a beam width in a circumferential direction and wherein adjacent elongated beams form substantially V-shapes when the cylinder is at the second diameter; and
a plurality of hinges connecting the elongated beams [having a hinge width] and positioned away from an apex of the substantially V-shapes, wherein deformation during expansion is confined substantially to the hinges [the hinge width is smaller than the beam width], wherein the plurality of hinges each have a tapered portion such that an end of each hinge closer to [an] the apex of the substantially V-shapes formed by the adjacent elongated beams has a width which is greater than a width of the hinge at an opposite end, and the tapered portion has a length longer than a non-tapered portion of the hinge.

49. (Previously Presented) The device of Claim 48, wherein the plurality of hinges taper substantially linearly.

50. (Previously Presented) The device of Claim 48, wherein the non-tapered portion extends along about 1/3 of the length of the hinge and the tapered portion extends along about 2/3 of the length of the hinge.

51. (Previously Presented) The device of Claim 48, wherein during expansion the hinges experience deformation below their elastic limit.

52. Cancelled.

53. (Previously Presented) The device of Claim 48, wherein during expansion a structure adjacent the hinges experiences at least two degrees of freedom of motion.

54. Cancelled.

55. (Currently Amended) The device of Claim 48, wherein the plurality of hinges are tapered with the hinge widths, hinge length, and taper adjusted to achieve a desired value of the maximum strain along the hinges.

56. – 63. Cancelled.

64. (Previously Presented) The device of Claim 48, wherein the taper is substantially constant along a length of about 2/3 of a length of the hinge.

65. (Previously Presented) The device of Claim 48, wherein the taper extends along a length of about 2/3 of a length of the hinge.

66. (Previously Presented) The device of Claim 48, comprising a pawl disposed adjacent to the hinge and a plurality of teeth adapted to receive the pawl in a locking configuration.

67. (Previously Presented) The device of Claim 66, wherein during expansion, the pawl experiences at least two degrees of freedom of motion.

68. (Previously Presented) The device of Claim 48, wherein the device is laser-cut.

69. (Previously Presented) The device of Claim 48, wherein the elongated beams further include a plurality of apertures disposed therein and a beneficial agent disposed within the apertures.

70. (Previously Presented) The device of Claim 48, wherein a recoil of the medical device after expansion to the second diameter is less than about eight percent.

71. (Previously Presented) The device of Claim 48, wherein a recoil of the medical device after expansion to the second diameter is less than about five percent.

72. (Previously Presented) The device of Claim 48, wherein the device is manufactured of a biodegradable material.

73. (Previously Presented) The device of Claim 48, wherein the device is manufactured of Nitinol, polymer, or a composite of polymer and Nitinol.

74. - 84. Cancelled.

85. (Currently Amended) An expandable stent comprising:
a plurality of elongated beams joined together to form a substantially cylindrical stent which is expandable from a cylinder having a first diameter to a cylinder having a second diameter, wherein adjacent ones of the plurality of elongated beams form substantially V-shapes when the cylinder is at the second diameter; and

a plurality of hinges connecting the elongated beams and positioned away from an apex of the substantially V-shapes, [the plurality of hinges having a hinge width and the plurality of elongated beams having a beam width, wherein the hinge width is smaller than the beam width,] wherein deformation during expansion is confined substantially to the hinges, wherein the plurality of hinges each includes a tapered portion such that an end of each hinge closer to [an] the apex of the substantially V-shapes formed by the adjacent elongated beams has a width which is greater than a width of the hinge at an opposite end, and wherein substantially the entire tapered portion of the hinge deforms during expansion of the cylinder from the first diameter to the second diameter.

86. (Previously Presented) The stent of Claim 85, wherein the tapered portion tapers substantially linearly.

87. (Previously Presented) The stent of Claim 85, wherein a non-tapered portion of the hinge extends along about 1/3 of the length of the hinge and the tapered portion of the hinge extends along about 2/3 of the length of the hinge.

88. (Previously Presented) The stent of Claim 85, wherein during expansion the hinges experience deformation below their elastic limit.

89. Cancelled.

90. (Previously Presented) The stent of Claim 85, wherein during expansion a structure adjacent the hinges experiences at least two degrees of freedom of motion.

91. (Currently Amended) The stent of Claim 85, wherein the plurality of hinges are tapered with the hinge widths, hinge length, and taper adjusted to achieve a desired value of the maximum strain along the hinges.

92. (Previously Presented) The stent of Claim 85, wherein the taper is substantially constant along a length of about 2/3 of a length of the hinge.

93. (Previously Presented) The stent of Claim 85, wherein the taper extends along a length of about 2/3 of a length of the hinge.

94. (Previously Presented) The stent of Claim 85, comprising a pawl disposed adjacent to the hinge and a plurality of teeth adapted to receive the pawl in a locking configuration.

95. (Previously Presented) The stent of Claim 94, wherein during expansion, the pawl experiences at least two degrees of freedom of motion.

96. (Previously Presented) The stent of Claim 85, wherein the device is laser-cut.

97. (Previously Presented) The stent of Claim 85, wherein the elongated beams further include a plurality of apertures disposed therein and a beneficial agent disposed within the apertures.

98. (Previously Presented) The stent of Claim 85, wherein a recoil of the medical device after expansion to the second diameter is less than about eight percent.

99. (Previously Presented) The stent of Claim 85, wherein a recoil of the medical device after expansion to the second diameter is less than about five percent.

100. (Previously Presented) The stent of Claim 85, wherein the device is manufactured of a biodegradable material.

101. (Previously Presented) The stent of Claim 85, wherein the device is manufactured of Nitinol, polymer, or a composite of polymer and Nitinol.

102. (New) The stent of Claim 85, wherein the width of the hinge closest to the apex of the substantially V-shapes is smaller than the beam width.

103. (New) The stent of Claim 85, wherein the hinges are axially aligned with an adjacent elongated beam when the stent is in the first diameter.

104. (New) The stent of Claim 90, wherein the structure adjacent the hinges remains between the elongated beams during expansion.

105. (New) An expandable medical device according to Claim 48, wherein the width of the hinge closest to the apex of the substantially V-shapes is smaller than the beam width.

106. (New) An expandable medical device according to Claim 48, wherein the hinges are coaxial with an adjacent elongated beam when the stent is in the first diameter.

107. (New) The device of Claim 53, wherein the structure adjacent the hinges remains between the elongated beams during expansion.